CHAPTER 2:
THE MODEL ANTIDEGRADATION IMPLEMENTATION PROCEDURE[1]

PART I. INTRODUCTION

These antidegradation procedures provide detailed methods and guidance to be followed by the Water Quality Board (the Board) and the Water Quality Division (the Division) in implementing the state antidegradation policy found at [insert appropriate citation]. In all cases, applicable technology and water quality-based requirements are to be implemented in combination with the antidegradation requirements described in this document.

Implementation of state and federal antidegradation requirements serves to promote the maintenance and protection of existing surface water quality. Under this program. all "waters of the state" are provided one of four different levels of antidegradation protection. The level of protection that is provided to a specific segment depends upon a number of factors discussed in detail below. At a minimum, all waters are subject to a base level of protection (known as tier 1 or existing use protection); some waters may qualify only for this level of protection. Antidegradation requirements are triggered whenever a *regulated activity* is proposed that may have some effect on surface water quality. Such activities are reviewed to determine, based on the level of antidegradation protection afforded to the affected waterbody segment, whether the proposed activity should be authorized.

Antidegradation requirements are triggered whenever a regulated activity is proposed that may have some effect on surface water quality.

This guidance has three principal components. First, key terms are defined. Second, the procedures to be followed in completing an antidegradation review are presented. Finally, a number of questions and answers are included to further illustrate how these antidegradation implementation procedures will be applied. A copy of the antidegradation worksheet that the Division will use to document review findings is attached.

[1] This chapter of the guidance is intended to provide a recommended example of an antidegradation implementation procedure. It includes examples of each of the types of provisions that EPA Region VIII considers essential. Adoption (with or without modification) of this model procedure is recommended by the Region.

PART II. DEFINITIONS

An **Antidegradation** Review is the process by which the state determines that antidegradation requirements are satisfied for a given regulated activity that may have some effect on surface water quality.

Assimilative capacity is the increment of water quality (in terms of concentration), during the appropriate critical condition(s), that is better than the applicable numeric criterion.

Bioaccumulative toxic substances are defined as substances with bioconcentration factors (BCFs) greater than 250.

Bioconcentration Factor (BCF) is the ratio of a substance's concentration in tissue versus its concentration in water, in situations where the food chain is not exposed or contaminated. For nonmetabolized substances, it represents equilibrium partitioning between water and organisms.

Designated use means a use that is specified in water quality standards as a goal for the waterbody segment, whether or not it is currently being attained.

Existing use means a use that is actually attained in the waterbody on or after November 28, 1975, whether or not it is included in the water quality standards.

High quality water means a waterbody that meets the state's test of "high quality," which is discussed in paragraphs VI(A)(2) and (3) of this guidance. In genera!, waters whose existing quality is better than necessary to support fishable/swimmable uses will be considered "high quality."

Outstanding National Resource Water (ONRW) is a waterbody that has been identified as possessing outstanding ecological or recreational attributes, and has been design&ted as an ONRW in the state water quality standards.

Outstanding State Resource Water (OSRW) is a waterbody that has been identified as possessing outstanding ecological or recreational attributes and has been designated as an OSRW in the state water quality standards.

Reasonable Alternatives shall be identified based on case-specific information. Generally speaking, non-degrading or less-degrading pollution-control alternatives shall be considered reasonable where the costs of such alternatives are less than 110 % of the costs of the pollution control measures associated with the proposed activity.

Regulated activity includes any activity that requires a permit or a water quality certification pursuant to state or federal law (e.g., CWA § 402 NPDES permits, CWA § 404 dredge and fill permits, any activity requiring a CWA § 401 certification), any activity subject to nonpoint source control requirements or regulations, and any activity which is otherwise subject to state regulations[1] that specify that the antidegradation review process is applicable. For purposes of this implementation procedure, the term "proposed activity" means a proposed activity that is also a regulated activity.

Trading means establishing upstream controls to compensate for new or increased downstream sources, resulting in maintained or improved water quality at all points, at all times, and for a!! parameters. Trading may involve point sources, nonpoint sources, or a combination of point and nonpoint sources.

PART III. THE ANTIDEGRADATION REVIEW PROCESS

The Division will conduct some level of antidegradation review for all regulated activities that have the potential to affect existing water quality. The specifics of the review will depend upon the waterbody segment that would be affected, the tier of antidegradation applicable to that waterbody segment, and the extent to which existing water quality would be degraded.

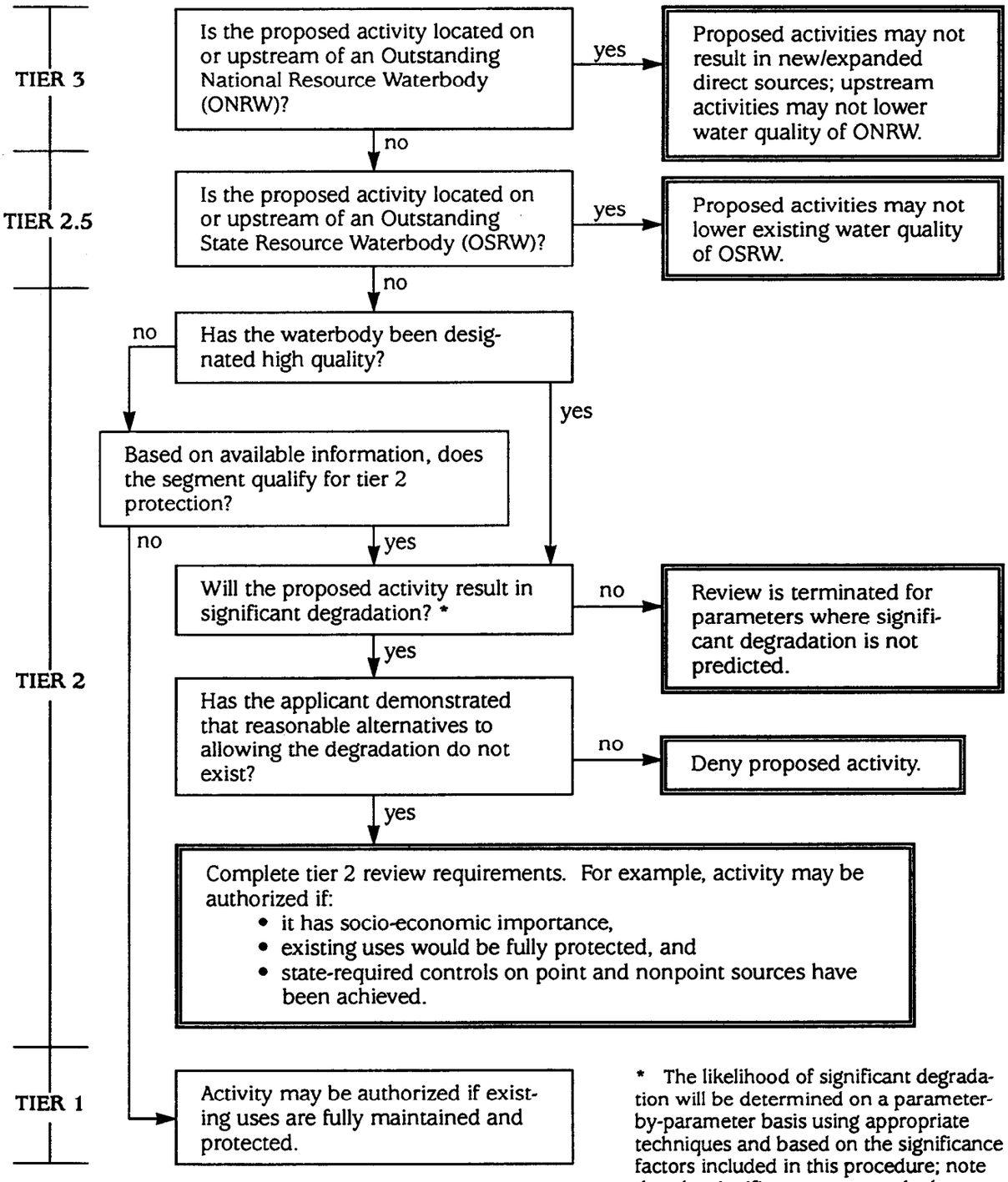
The sequence of steps to be completed by the Division in conducting an antidegradation review is presented in Figure 1. Only major antidegradation program requirements are represented in Figure 1. In conducting an antidegradation review, the first task that will be addressed by the Division is to determine which tier of antidegradation applies. This is accomplished, as described in detail below, based either on the antidegradation designation which has been assigned to the waterbody (i.e. where such a designation has been made) or on whether the existing quality of the segment is better than necessary to support "fishable/swimmable" uses.

Once the correct tier of requirements is identified, the Division determines whether authorizing the proposed activity would be consistent

[1] Such regulations can include the antidegradation policy included in a state's water quality standards. Using this approach, an antidegradation review may be required For any and all activities that may affect water quality (i.e.. including those activities not otherwise subject to control regulations/requirements). For the sake of clarity. EPA recommends that the activities requiring an antidegradation review be discussed in the antidegradation policy or implementation procedure. Antidegradation procedures should specifically state whether, and to what extent, activities which would not otherwise be regulated are subject to antidegradation review requirements (see the discussion of this topic in Chapter 4 and Appendix 3).

FIGURE 1

ANTIDEGRADATION IMPLEMENTATION FLOW CHART



* The likelihood of significant degradation will be determined on a parameter-by-parameter basis using appropriate techniques and based on the significance factors included in this procedure; note that the significance test may be bypassed where reasonable less-degrading alternatives are clearly available.

with state antidegradation requirements. The major conclusions of the Division's review are documented using an antidegradation review worksheet, a copy of which is attached to this implementation procedure. Based upon the review findings, a preliminary decision is made by the Division and subjected to intergovernmental coordination and public participation. Public participation occurs regardless of the outcome of the preliminary decision (i.e., whether the proposed activity would be authorized or denied).

The Division then considers public comments and reaches a final decision regarding whether to authorize the proposed activity pursuant to the state antidegradation requirements. The substance and basis of the final decision by the Division are documented in the administrative record. Below, the procedures to be followed by the Division in reaching a preliminary decision under each tier of antidegradation are described in detail.

PART IV. TIER 3 PROCEDURES

A. Waters Qualifying for ONRW Protection

(l) Qualification Criteria

Segments will be subject to tier 3 protection requirements only where an ONRW designation has been assigned by the Board through the state rulemaking procedures. The factors to be considered in determining whether to assign an ONRW designation may include the following: (a) location (e.g., on federal lands such as national parks, national wilderness areas, or national wildlife refuges), (b) previous special designations (e.g., wild and scenic river), (c) existing water quality (e.g., pristine or naturally-occurring), (d) ecological value[1] (e.g., presence of threatened or endangered species during one or more life stages), (e) recreational or aesthetic value (e.g., presence of an outstanding recreational fishery), and (f) other factors that indicate outstanding ecological or recreational resource value (e.g., rare or valuable wildlife habitat). Where determined appropriate, the ONRW designation may be applied to an entire category of waters (e.g., a wilderness area or areas).

(2) Water Quality Requirements

Outstanding water quality is not a prerequisite for ONRW designation. The only requirement is that the segment have outstanding value as an aquatic resource, which may derive from the presence of exceptional scenic or recreational attributes, or from the presence of

[1] States should consider ONRW or OSRW designations for segments selected as reference sites (e.g., to define biological/ecological integrity for a particular ecoregion).

unique or sensitive ecosystems that have naturally low water quality (i.e., as measured by conventional parameters).

(3). Public Nomination

The public may nominate any state water for ONRW protection at any time by sending a written request to the following address: [insert appropriate address]. The written request should explain why an ONRW designation is warranted based on one or more of the factors identified above.

B. Direct Sources to ONRWs

Any proposed activity that would result in a permanent new or expanded direct source of pollutants to any segment which has been designated as an ONRW is prohibited.

(1) Prohibition on New or Expanded Sources

Any proposed activity that would result in a permanent new or expanded direct source of pollutants to any segment which has been designated as an ONRW is prohibited. This prohibition applies to new sources, expansion of existing sources in which treatment levels are maintained, and expansion of existing sources in which treatment levels are increased to maintain existing pollutant loading levels. Regardless of effluent quality, any new or expanded direct source is prohibited.

C. Sources Upstream from ONRWs

(1) No Change in Water Quality Allowed

Any proposed activity that would result in a permanent new or expanded indirect source of pollutants (i.e., an upstream source) to an ONRW segment is prohibited except where such source would have no effect on the existing quality of the downstream ONRW segment. Effects on ONRW water quality resulting from upstream sources will be determined based on appropriate techniques and best professional judgment. Factors that may be considered in judging whether ONRW quality would be affected include: (a) percent change in ambient concentrations predicted at the appropriate critical condition(s), (b) percent change in loadings (i.e., the new or expanded loadings compared to total existing loadings to the segment), (c) percent reduction in available assimilative capacity, (d) nature, persistence, and potential effects of the parameter, (e) potential for cumulative effects, and (f) degree of confidence in the various components of any modeling technique utilized (e.g., degree of confidence associated with the predicted effluent variability).

(2) Trading

A proposed activity that will result in a new or expanded upstream source may be allowed where the applicant agrees to implement or

finance upstream controls of point or nonpoint sources sufficient to offset the water quality effects of the proposed activity. Where such trading occurs upstream of an ONRW segment, tier 3 requirements will be considered satisfied where the applicant can show that water quality at all points within the study area will be either maintained or improved. The Division will document the basis for the trade through a Total Maximum Daily Load (TMDL) pursuant to CWA § 303(d) requirements. Such TMDLs will include an appropriate margin of safety. Such a margin of safety will address, in particular, the uncertainties associated with any proposed nonpoint source controls, as well as variability in effluent quality for point sources. See definition of trading in Part II.

(3) Information Requirements
The applicant may be required to provide information sufficient to evaluate the potential effects of the proposed activity on downstream ONRWs. The information that will be required in a given situation will be identified on a case-by-case basis by the Division.

D. Temporary and Limited Effects

(1) Guidelines
A direct or upstream source that would result in a temporary *and* limited effect on ONRW water quality may be authorized. The decision regarding whether effects will be temporary and limited will be handled on a case-by-case basis. As a *non-binding* rule of thumb, activities with durations less than one month *and* resulting in less than a 5% change in ambient concentration will be deemed to have temporary and limited effects. Decisions on individual proposed activities may be based on the following factors: (a) length of time during which water quality will be lowered, (b) percent change in ambient concentrations, (c) parameters affected, (d) likelihood for long-term water quality benefits to the segment (e.g., as may result from dredging of contaminated sediments), (e) degree to which achieving applicable water quality standards during the proposed activity may be at risk, and (f) potential for any residual long-term influences on existing uses.

PART V. TIER 2.5 PROCEDURES

A. Waters Qualifying for OSRW Protection

(1) Qualification Criteria
Segments will be subject to tier 2.5 protection requirements only where an OSRW designation has been assigned by the Board through the state rulemaking procedures. The factors to be consid-

ered in determining whether to assign an OSRW designation may include the following: (a) location (e.g., on federal lands such as national parks. national wilderness areas, or national wildlife refuges), (b) previous special designations (e.g., wild and scenic river), (c) existing water quality (e.g., pristine or naturally-occurring), (d) ecological value (e.g., presence of threatened or endangered species during one or more life stages), (e) recreational or aesthetic value (e.g.. presence of an outstanding recreational fishery), and (f) other factors that indicate outstanding ecological or recreational resource value (e.g., rare or valuable wildlife habitat). Where determined appropriate, the OSRW designation may be applied to an entire category of waters (e.g., all waters located within a state or national park).

The public may nominate any state water for OSRW protection at any time via a written request that explains why such a designation is warranted.

(2) Water Quality Requirements

Outstanding water quality is not a prerequisite for OSRW designation. The only requirement is that the segment have outstanding value as an aquatic resource, which may derive from the presence of exceptional scenic or recreational attributes, or from the presence of unique or sensitive ecosystems that have naturally low water quality (i.e., as measured by conventional parameters).

(3) Public Nomination

The public may nominate any state water for OSRW protection at any time by sending a written request to the following address: [insert appropriate address]. The written request should explain why an OSRW designation is warranted based on one or more of the factors identified above.

B. Direct and Indirect Sources to OSRWs

(1) No Change in Water Quality Allowed

Except as noted below, any proposed activity that would result in a permanent lowering in OSRW water quality is prohibited. This procedure applies to direct and indirect (i.e.. upstream) sources of pollutants to OSRWs. The prohibition applies to new sources and expansion of existing sources in which treatment levels are maintained. Proposed expansions that would also upgrade treatment levels such that existing loading levels will be maintained may be authorized. However, decisions regarding whether to allow new or expanded sources will be made on a case-by-case basis using appropriate techniques and best professional judgment. Factors that may be considered in judging whether OSRW quality would be lowered include: (a) percent change in ambient concentrations predicted at the appropriate critical condition(s), (b) percent change in loadings (i.e., the new

or expanded loadings compared to total existing loadings to the segment), (c) percent reduction in available assimilative capacity, (d) nature, persistence, and potential effects of the parameter, (e) potential for cumulative effects, and (f) degree of confidence in the various components of any modeling technique utilized (e.g., degree of confidence associated with the predicted effluent variability).

(2) Trading

A proposed activity that will result in a new or expanded source may also be allowed where the applicant agrees to implement or finance upstream controls of point or nonpoint sources sufficient to offset the water quality effects of the proposed activity. Where such trading occurs on or upstream of an OSRW segment, tier 2.5 requirements will be considered satisfied where the applicant can show that water quality at all points within the study area will be either maintained or improved. The Division will document the basis for the trade through a TMDL pursuant to CWA § 303(d) requirements. Such TMDLs will include an appropriate margin of safety. Such a margin of safety will address, in particular, the uncertainties associated with any proposed nonpoint source controls, as well as variability in effluent quality for point sources. See definition of trading in Part II.

(3) Information Requirements

The applicant may be required to provide information sufficient to evaluate the potential effects on downstream OSRWs. The information that will be required in a given situation will be identified on a case-by-case basis.

(4) Exceptions

An exception may be made for permanent new or expanded sources that, overall, serve to maintain or enhance the value, quality, or use of the OSRW. Prior to allowing exceptions, the Division shall work with the project applicant to identify the least-degrading alternative. For example, a new or expanded source of water treatment facility effluent associated with a visitor center may be authorized where reasonable non-degrading or less-degrading treatment alternatives to allowing a new or expanded source are not available. The Division shall utilize the procedures included in Part VI(C) to evaluate alternatives. Exceptions will be granted on a case-by-case basis; in general, exceptions will be granted only where uses will be fully protected and effects on existing water quality will be minimal.

C. Temporary and Limited Effects

(1) Guidelines

Activities that would result in a temporary *and* limited effect on OSRW water quality may be authorized. The decision regarding whether effects will be temporary and limited will be handled on a

case-by-case basis. As a *non-binding* rule of thumb, activities with durations less than one month and resulting in less than a 5 % change in ambient concentration will be deemed to have temporary and limited effects. Decisions on individual proposed activities may be based on the following factors: (a) length of time during which water quality will be lowered, (b) percent change in ambient concentrations, (c) parameter affected, (d) likelihood for long-term water quality benefits to the segment resulting from the proposed activity (e.g., as may result from dredging of contaminated sediments), (e) degree to which achieving applicable water quality standards during the proposed activity may be at risk, (f) potential for any residual long-term influences on existing uses, and (g) public use benefits resulting from the proposed activity (e.g., enhancement or expansion of public access, maintenance of the resource).

PART VI. TIER 2 PROCEDURES

A. Waters Qualifying for Tier 2 Protection

(1) Two Qualification Mechanisms

Segments may be afforded tier 2 protection by the state in one of two ways. The first way is for the Board to assign tier 2 protection through a rulemaking action. Where this occurs, a high quality use designation will be added to the state standards for the segment. The sole implication of a high quality designation in the state water quality control program is that it *mandates* application of the tier 2 review requirements described below. The second way to afford tier 2 protection is for the Division to make a determination that this level of protection is warranted during the antidegradation review of a proposed activity. Such decisions will be based on all relevant information including any ambient water quality (i.e., physical, chemical, biological) data submitted by the applicant. The criteria that will be used in identifying high quality tier 2 waters ar described below. The same criteria for making the high quality decision apply regardless of whether the decision is made by rulemaking or during the Division's antidegradation review. Regardless of how the high quality decision is made, the same level of protection and the same procedures are applied.

(2) Qualification Factors

Decisions regarding whether a waterbody is high quality and subject to tier 2 protection requirements will be based on a best professional judgment of the overall quality and value of the segment. In general, waters with existing quality that is better than necessary to support fishable/swimmable uses will be considered high quality and subject to tier 2 requirements. The factors that may be considered in determining whether a segment satisfies the high quality test include the

following: (a) existing aquatic life uses, (b) existing recreational or aesthetic uses, (c) existing water quality for all parameters (i.e. subject to the availability of monitoring data or other information for the segment, upstream segments, or for comparable segments), and (d) the overall value of the segment from an ecological and public use perspective. Note that attainment of *both* aquatic life (fishable) and recreational (swimmable) uses is *not* required in order to qualify as a high quality segment.

(3) Presumptive Applicability

In general, it is presumed that a very large majority of state waters qualify for tier 2 protection. However, there are some waters in the state where neither of the CWA fishable/swimmable goal uses are attained. It is the intent of these procedures to apply only existing use (tier 1) protection to such waters. There also may be waters in the state where one or both of the fishable/swimmable uses are attained, but existing water quality is not "better than necessary" to support the goal uses (i.e., assimilative capacity does not exist for a number of parameters). It is the intent of these procedures to apply only existing use (tier 1) protection to such waters provided that there is no assimilative capacity for *each* of the parameters to be affected by the proposed activity.

In general, it is presumed that a very large majority of state waters qualify for tier 2 protection.

(4) Criteria Exceedences

A difficult question that must be addressed by these procedures is whether occasional exceedences of one or more narrative or numeric water quality criteria constitute nonattainment sufficient to preclude tier 2 protection. In waters where exceedences have occurred and continue to occur for one or more parameters, a judgment will be made based on the factors identified above and in consideration of information submitted by the applicant and by the public. As a general operating rule, tier 2 protection will be applied even where the criteria for some parameters are not always satisfied.

(5) Information Requirements

The applicant may be required to provide monitoring data or other information about the affected waterbody to help determine the applicability of tier 2 requirements based on the high quality test. The information that will be required in a given situation will be identified on a case-by-case basis. Because these procedures presume that tier 2 protection requirements will be applied, such information will typically be required of the applicant only where this presumption is in dispute. Such information may include recent ambient chemical, physical, and biological monitoring data sufficient to characterize, during the appropriate critical condition(s), the existing uses and the spatial and temporal variability of existing quality of the segment for the parameters that would be affected by the proposed activity.

(6) Characterizing Existing Quality

The Division will follow the state procedures used to characterize existing background quality that are used for purposes of developing Total Maximum Daily Loads (TMDLs). The characterization of existing background water quality should appropriately consider spatial and temporal variability. However, where background water column data are limited, the Division may conclude that a segment is high quality and subject to tier 2 protection based on ancillary data such as land use information, population and demographics, geology, presence of point or nonpoint sources, climatological data, or the health of the aquatic community.

(7) Public Nomination

The public may nominate any state water for a high quality designation at any time by sending a written request to the following address: [insert appropriate address]. The written request should explain why a high quality designation is warranted based on the factors identified and discussed in paragraph (2) and (3).

The Division will identify and eliminate from further review only those proposed activities that present insignificant threats to water quality. Proposed activities will be considered significant and subject to tier 2 requirements where significant degradation is projected for one or more water quality parameters.

B. Significant Degradation

(1) Overview

Once it is determined that tier 2 protection applies to a waterbody via one of the two decision mechanisms described above, the next step in the review process is to determine whether the degradation that will result from the proposed activity is significant enough to warrant further review (such as evaluation of alternatives). The factors to be addressed in judging the significance of the proposed activity are identified in paragraph (2) below. Where the significance of the degradation associated with a proposed activity is in dispute, the factors identified in paragraph (2) should also be the focal point of opposing views by the applicant or the public.

(2) Significance Factors

The likelihood that a proposed activity will pose significant degradation will be judged by the Division for all water quality parameters that would be affected by the proposed activity. Such significance judgments will be made on a parameter-by-parameter basis. The Division will identify and eliminate from further review only those proposed activities that present insignificant threats to water quality. Proposed activities will be considered significant and subject to tier 2 requirements where significant degradation is projected for one *or more* water quality parameters. Because determinations of significant degradation are most appropriately made based on case-specific information, these procedures do not provide rigid decision crite-

ria for judging significant changes in water quality. Rather, significant degradation may be demonstrated with respect to any one (or a combination) of the following factors: (a) percent change in ambient concentrations predicted at the appropriate critical condition(s), (b) the difference, if any, between existing ambient quality and ambient quality that would exist if all point sources were discharging at permitted loading rates, (c) percent change in loadings (i.e., the new or expanded loadings compared to total existing loadings to the segment or, for existing facilities only, the proposed permitted loadings compared to the existing permitted loadings), (d) percent reduction in available assimilative capacity, (e) nature, persistence, and potential effects of the parameter, (f) potential for cumulative effects.[1] (g) predicted impacts to aquatic biota, (h) degree of confidence in any modeling techniques utilized, and (i) the difference, if any, between permitted and existing effluent quality.

(i) Required Analyses. Based on one or more of the significance factors identified above, the Division may make determinations of significant degradation based on appropriate modeling techniques coupled with detailed characterization of the existing background water quality. However, determinations of significance need not be complicated, data-intensive, or resource-intensive. It is not the intent of these procedures to require detailed analyses to address each of the factors identified above. Where appropriate, determinations of significance may be based on simple analyses. For example, proposed activities may be judged as insignificant where: (a) available dilution exceeds 100:l , (b) the proposed activity would not result in a significant increase of loadings for any parameter, or (c) there is substantial potential for the proposed activity to result in a net long-term water quality benefit to the segment. Likewise, a significant increase in loadings for any given parameter may be the basis for concluding that significant degradation will occur.

(ii) Persistent Toxics. The significance of proposed new or expanded sources of bioaccumulative or other persistent toxic substances will be judged depending upon, for example, existing loadings of the substances to the segment from all sources. The Division's interpretation of monitoring data or other information

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[1] It is anticipated that most antidegradation reviews will be limited to single sources; however, where multiple new or expanded sources are likely to be proposed within a short time period (e.g., one permit cycle), the Division may base a determination of significance on the cumulative effect of all the proposed sources. Where available, a Total Maximum Daily Load (TMDL) analysis will be used as the basis for the significance determination. Where multiple sources are deemed significant in a cumulative sense, each individual proposed source shall be subject to further tier 2 review. Likewise, where multiple loading increases for a single source occur over time, the cumulative effects of the sum total increase in loading may be the basis for requiring further tier 2 review.

indicating fish tissue or sediment accumulation in the watershed will be considered with respect to judging the significance of new or expanded sources of persistent toxic substances.

(3) General Guidelines

As a non-binding rule-of-thumb, proposed activities that would lower the ambient quality of any parameter by more than 5%, reduce the available assimilative capacity by more than 5%, or increase pollutant loadings to a segment by more than 5% will be presumed to pose significant degradation. The intent of this guideline is to establish a de minimis test of significance and to eliminate from further review only those proposed activities that will result in truly minor changes in water quality.

(4) By-passing the Significance Test

Where available information clearly indicates that reasonable non-degrading or less-degrading alternatives to lowering existing water quality exist, the Division may by-pass the significant degradation requirements and direct the applicant to demonstrate the necessity of the degradation pursuant to Part VI(C) below.'

(5) Trading

The Division may also conclude that a proposed activity will not pose significant degradation based upon the specifics of any upstream/downstream trading that has been agreed to by the project applicant. The Division will document the basis for the trade through a TMDL pursuant to CWA § 303(d) requirements. Such TMDLs will include an appropriate margin of safety. Such a margin of safety will address, in particular, the uncertainties associated with any proposed nonpoint source controls, as well as variability in effluent quality for point sources. See definition of trading in Part II.

(6) Information Requirements

The applicant may be required to provide monitoring data or other information about the affected waterbody and/or proposed activity to help determine the significance of the proposed degradation for specific parameters. The information that will be required in a given situation will be identified on a case-by-case basis. Because these procedures establish a fairly low threshold of significance, in many cases a large data base will not be necessary to determine that a proposed activity will result in significant degradation. The information required may include recent ambient chemical, physical, or biological monitoring data sufficient to characterize, during the appropriate critical condition(s). the spatial and temporal variability of existing

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* By-passing the significance test is an appropriate means of maintaining and protecting existing water quality even where proposed effects on water quality may/will be minor.

background quality of the segment for the parameters that would be affected by the proposed activity, as well as the water quality that would result if the proposed activity were authorized. State TMDL procedures for characterizing existing water quality and projecting future water quality will be the basis for identifying needed information and interpreting available data.

(7) Determine Significance of Proposed Activity

Activities determined to be significant by the Division shall be subject to the tier 2 review requirements described below. If the Division determines that an activity will not pose significant degradation for any parameter, no further antidegradation tier 2 requirements shall apply; however, such activities must still meet all technology and/or water quality based control requirements or conditions of the permit or the water quality certification.

C. Evaluation of Alternatives to Lowering Water Quality

(1) Role of the Division

The primary emphasis of the Division's tier 2 antidegradation reviews will be to determine whether reasonable non-degrading or less-degrading alternatives to allowing the proposed degradation are available. The Division will first evaluate any alternatives analysis submitted by the applicant for consistency with the minimum requirements described below. If an acceptable analysis of alternatives was completed and submitted to the Division as part of the initial project proposal, no further evaluation of alternatives will be required of the applicant. If an acceptable alternatives analysis has not been completed, the Division will work with the project applicant to ensure that an acceptable alternatives analysis is developed.

The primary emphasis of the Division's tier 2 antidegradation reviews will be to determine whether reasonable non-degrading or less-degrading alternatives to allowing the proposed degradation are available.

(2) Role of the Applicant

The applicant of any proposed activity that would significantly lower water quality in a high quality segment is required to prepare an evaluation of alternatives. The evaluation is required, at a minimum, to provide substantive information pertaining to the costs *and* environmental impacts associated with the following alternatives: (a) pollution prevention measures[1] (e.g., substitution of less toxic substances), (b) reduction in scale of the project, (c) water recycle or reuse, (d) process changes, (e) innovative treatment technology

[1] For NPDES permits, completing a pollution prevention audit will be considered an acceptable evaluation of pollution prevention alternatives.

(e.g., land application of wastewater). (f) advanced treatment technology, (g) seasonal or controlled discharge options to avoid critical water quality periods, (h) improved operation and maintenance of existing treatment systems, and (i) alternative discharge locations.

(3) Preliminary Determination

Once the Division has determined that feasible alternatives to allowing the degradation have been adequately evaluated, the Division shall make a preliminary determination regarding whether reasonable non-degrading or less-degrading alternatives are available. This determination will be based primarily on the alternatives analysis developed by the project applicant, but may be supplemented with other information or data. As a *non-binding* rule of thumb, non-degrading or less-degrading pollution control alternatives with costs that are less than 110 % of the costs of the pollution control measures associated with the proposed activity shall be considered reasonable.'
If the Division determines that reasonable alternatives to allowing the degradation do not exist, the Division shall continue with the tier 2 review and document the substance and basis for that preliminary determination using the antidegradation review worksheet.

(4) If Reasonable Alternatives Exist

If the Division makes a preliminary determination that one or more reasonable alternatives to allowing the degradation exist, the Division will work with the project applicant to revise the project design. If a mutually-acceptable resolution cannot be reached, the Division will document the alternatives analysis findings and public notice a preliminary decision, based on antidegradation tier 2 requirements, to deny the activity.

(5) Role of Public

Based upon comments and information received during the public comment period, the Division may reverse its preliminary determination regarding the availability of reasonable alternatives to allowing the degradation.

D. Determination of Socio-Economic Importance

(1) Role of the Applicant

The applicant is required to demonstrate the social and economic importance of the proposed activity. The factors to be addressed in such a demonstration may include, but are not limited to, the follow-

[1] In evaluating the applicant's evaluation of alternatives, the Division may rely, in part, on guidance or assistance from EPA Headquarters on the use of economics in the water quality standards program.